REMARKS

Claims 1-30 were pending in the application. By this paper, Applicant has cancelled Claims 23-24 and 26-30 without prejudice, amended Claims 1, 8, 9, 18, 21 and 25, and added new Claims 31-46.   Accordingly, Claims 1-22, 25, and 31-46 are presented herein for examination.

Claim Objections

Per Par. 9, page 4 of the Office Action, Claims 8, 18, and 21 have been amended herein as suggested by the Examiner. Applicant submits that these amendments overcome the Examiner's objections.

§112 Rejections

Per Pars. 10-12 of the Office Action, Claim 1 was rejected under 35 U.S.C. §112 as including an insufficient antecedent basis. Claim 1 is amended herein to change "memory" to "storage device", thereby providing adequate antecedent basis and overcoming the Examiner's rejection.

§102 Rejections

Per Par. 14 of the Office Action, Claims 1-4, 9-10, 14, 15, 18, 19 , 25 and 30 were rejected under 35 U.S.C. 102(e) as being anticipated by Blackmon, et al. (U.S. 6,628,662; hereinafter "Blackmon").

Per Par. 15 of the Office Action, Claims 1-3, 9-10, 25 and 30 were rejected under 35 U.S.C. 102(e) as being anticipated by Goodwin, et al. (U.S. 6,125,429; hereinafter "Goodwin").

By this paper, Applicant has amended independent Claims 1, 9, 18 and 25 to overcome these rejections, as discussed below.

Claim 1 – Claim 1 has been amended to include limitations that the recited processor interface device is used in an <u>extensible processor</u>. Support for this limitation is found throughout the specification, including *inter alia* at page 8, line 28 through page 9, line 3 of the specification as filed:

> *"The <u>extensible</u> nature of certain processor cores (e.g., the Applicant's "ARC" core) and associated XY memory allow DSP and I/O functions to be tightly coupled for such demanding applications. Using the apparatus and methodology of the present invention, the DSP core(s<u>) effectively become part of the parent processor core instruction set,</u> and I/O peripherals have direct memory access (DMA) to the processor core. "* {Emphasis added}

See also page 22, lines 4-6:

> *"Specifically, the macro functions, under CPU control <u>via customized instructions within the base or extension instruction sets of the parent processor, ... </u>"* {Emphasis added}

The Examiner is also referred to Applicant's Internet website (<u>www.arc.com</u>) for additional information on exemplary configurations of "extensible processors".

Applicant submits that neither Blackmon nor Goodwin (or Gove, et al, U.S. 5,471,592 cited by the Examiner) teach or suggest an extensible processor of any kind. As noted in the citation above, the use of an extensible processor (i.e., one where the base processor configuration and/or instruction set can be extended at time of design or configuration) provides significant benefits including a tight coupling between the processor core and the recited macro function(s). The macro function is not added as an after-thought or as an immutable entity within the design as in the Blackmon and Goodwin references, but rather considered at time of design of the processor core, and closely incorporated within the processor instruction set. This approach also provides the benefits of (i) flexibility (i.e., the designer can selectively configure their core and macro functions according to one or more design objectives such as die size, gate count or power consumption), and (ii) enhanced operation of the core, interface, and macro function(s) resulting at least in part from reduced complexity. The designer can also readily integrate any number of different macro function types and/or configurations with the same extensible host processor core, which is clearly not the case with a static design such as that of Blackmon or Goodwin.

Claim 9 – Claim 9 as amended herein now recites a <u>user-configured</u> processing device, wherein at least a portion of the processing device comprises <u>extension</u> hardware selected by said user at time of design of said processing device. Support for these amendments is replete throughout the specification; see, e.g., the citations presented above for Claim 1. Neither

Blackmon nor Goodwin teach or suggest a user-configurable processing device wherein at least a portion of the device is selected and added by a user at time of design.

Claim 18 – Claim 18 has been amended to include limitation relating to the stored data comprising first and second pages of data stored in respective X and Y memories, and simultaneously accessing said pages of data disposed within respective ones of said memory banks using respective ones of said macro functions such that two operand sources are provided simultaneously. Support for these amendments can be found at, *inter alia*, page 11, lines 24-30 and page 15, lines 21-33 of the specification as filed, as well as Fig. 6. Neither Blackmon nor Goodwin teach or suggest pages of data stored in respective X and Y memories, wherein two operand sources are provided simultaneously. In fact, Blackmon and Goodwin teach neither pages of data nor providing operands of any kind.

Claim 25 – Claim 25 has been amended herein such that the recited first means for processing data has a base instruction set and extension instruction set associated therewith, wherein access to the recited memory means is controlled at least in part by an instruction associated with the extension instruction set. Neither Blackmon nor Goodwin teach or suggest a processing means having base and extension instruction sets, nor the use of an extension instruction to control a memory means.

Based on the foregoing, Applicant submits that independent Claims 1, 9, 18, and 25 distinguish over the art of record, and overcome the Examiner's rejections.

Furthermore, since Claims 2-8, 10-17, and 19-22 depend from Claims 1, 9, and 18 respectively, Applicant submits that these Claims are also in condition for allowance.

§103 Rejections

The Examiner rejected Claims 5-8, 11-13, 16, 17, and 20-22 under 35 U.S.C. §103(a) as being unpatentable over Blackmon in view of Gove (U.S. 5,471,592). Applicant submits that neither Blackmon nor Gove teach or suggest any of the aforementioned limitations added to independent Claims 1, 9, or 18 by this paper, thereby rendering these Claims non-obvious as well. Since Claims 5-8, 11-13 and 16-17, and 20-22 depend from Claims 1, 9, and 18 respectively, these dependent Claims are also non-obvious and in condition for allowance.

New Claims

By this paper, Applicant has added new Claims 31-46, each of which are supported by the specification as filed. Applicant submits that each of these new Claims distinguish over the art of record (including Blackmon, Gove and Goodwin), and are also in condition for allowance.

5   Hence, in summary, Applicant submits that Claims 1-22, 25, and 31-46 and are in condition for allowance. Applicant respectfully requests that the Examiner pass this case to issuance at the earliest opportunity.

Other Remarks

10   Applicant hereby specifically reserves the right to prosecute claims of different or broader scope in a continuation or divisional application.

Applicant notes that any claim cancellations or additions made herein are made solely for the purposes of more clearly and particularly describing and claiming the invention and responding to the aforementioned restriction election, and not for purposes of overcoming art or

15   for patentability. The Examiner should infer no (i) adoption of a position with respect to patentability, (ii) change in the Applicant's position with respect to any claim or subject matter of the invention, or (iii) acquiescence in any way to any position taken by the Examiner, based on such cancellations or additions.

Furthermore, any remarks made with respect to a given claim or claims are limited solely

20   to such claim or claims.

If the Examiner has any questions or comments that may be resolved over the telephone, he/she is requested to call the undersigned at (858) 675-1670.

Respectfully submitted,

25   GAZDZINSKI & ASSOCIATES

Dated: May 24, 2004   By: _____

                                          Robert F. Gazdzinski
30   Registration No. 39,990
                                          11440 West Bernardo Court, Suite 375
                                          San Diego, CA 92127
                                          Telephone No.: (858) 675-1670
                                          Facsimile No.:   (858) 675-1674